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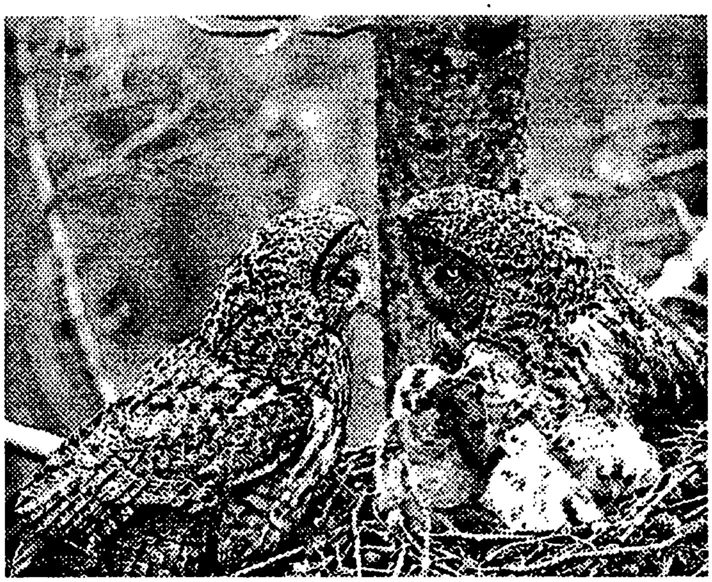
Environmental Restoration Program



Monthly Report for March 1993

Rocky Flats Office

April 20, 1993

Reviewed for Classification/UCNI
BY George A. Setlock
DATE 04/14/93 UNU

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR MARCH 1993

The Sitewide Annual Treatability Study Report was delivered to the Environmental Protection Agency (EPA) and Colorado Department of Health (CDH) on schedule, March 8, 1993. The annual report includes a summary of the status of each of the sitewide projects, a literature review of new and emerging technologies, and a summary of other relevant environmental projects at RFP.

In OU 1 bentonite was placed in the wetlands to decrease permeability before planting wetland vegetation and the follow-up surveys for the plutonium anomalies on the 881 Hillside started in and continued through March. The surveys are scheduled to be completed in April. An action plan for investigation of any hot spots has been submitted to the regulatory agencies.

Negotiations continue among DOE, EPA, CDH, and EG&G to revise the OU 1 Remedial Investigation (RI) Report to reflect the more-than 100 pages of comments received from the agencies on the Draft RI Report.

DOE requested extensions on three OU 1 IAG Table VI Milestones, including: Final RI Report from April 4, 1993, to November 15, 1993; the Draft Corrective Measures Study/Feasibility Study (CMS/FS) from June 29, 1993, to February 11, 1994, and the Final CMS/FS Report from December 23, 1993, to August 3, 1994. This is the second extension request for these milestones and was due to a protracted comment resolution period on the Draft RI Report and an increase in work scope. Work on the FS is on hold until after completion of the RI.

The OU 2 Bedrock Work Plan was submitted to EPA and CDH on March 15, 1993. EPA and CDH gave approval to begin field work according to Technical Memorandum (TM) #8, the Revised Phase II RFI/RI Work Plan. OU 2 field crews were mobilized on March 8, 1993, to collect 52 surficial soil samples for the Human Health Risk Assessment (HHRA) that was completed March 26, 1993, ahead of schedule.

In OU 3, a letter was sent from DOE to the CDH Project Manager for the Dose Reconstruction Project reaffirming the cooperative soil sampling agreement reached in the meeting held February 5, 1993. A proposal was made at the meeting to conduct mutual soil sampling between DOE and Colorado State University (CSU), with the samples being split three ways. The first of three joint soil-sampling events was conducted March 31, 1993, with representatives from the three organizations currently conducting studies on offsite contamination: DOE, CSU, and the CDH sponsored Health Advisory Board.

Revision of the OU 13 Final Phase I RFI/RI Work Plan was accomplished ahead of schedule on March 10, 1993. All work was done in-house without subcontractor support. This represents a cost savings of approximately $40,000, based on costs incurred during the development of the Final Work Plan in October 1992.

PROBLEMS AND PROGRAMMATIC ISSUES

Procurement Status

Environmental Restoration Management (ERM) continues to provide procurement training in the area of Contractor Technical Representative (CTR) information. Training was conducted for five additional ERM personnel on March 17, 1993. Another CTR training session is planned for April 26, 1993. This session will be held at the Interlocken facility with approximately 30 CTRs attending.

Procurement support and a representative from Environmental Services will be conducting a brief training session on Technical Evaluations and organizational conflict of interest on April 27 and make up session to be held on May 10, 1993. This session will train the CTR on how to write a detailed Technical Evaluation in response to a proposal as well as how to distinguish any conflict of interest among subcontractors.

Other

The March 12, 1993, IAG Milestone for submittal of the OU 2 Draft Phase II RFI/RI Report was not met due to the delayed Bedrock Program. In a letter received by DOE on March 16, 1993, EPA and CDH denied a 9-month extension request for submittal of the OU 2 Draft RI Report. EPA and CDH notified DOE that stipulated penalties may be assessed at a rate not to exceed $5,000 for the first week and $10,000 every week thereafter that the report is late. Negotiations among all parties continued in order to resolve issues preventing completion of the delinquent report.

The July 16, 1993, IAG Milestone for submittal of the OU 3 Draft Phase I RFI/RI Report will require an extension due to delays in completing the field work. The need for an extension is primarily because of the refusal of several offsite landowners to allow access for sampling.

DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs (8, 9, 10, 12, 13, 14) according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones.

NEAR-TERM IAG MILESTONES

OU	Milestone Description	Due to EPA/CDH
Sitewide	Annual Treatability Study Report	Mar 8, 1993
02	Draft Phase II RFI/RI Report	Mar 12, 1993**
01	Submit Final Phase III RFI/RI Report	April 4,1993*
02	Submit Draft Treatability Test Report-Rads Removal System	May 18,1993
01	Draft CMS/FS Report	June 29, 1993*

**An extension request on the OU 1 Final RI Report and the Draft and Final CMS/FS Reports are pending.*

***Milestone not met. Discussions underway with regulators.*

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for March 1993. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant (RFP) in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Technical progress, schedule status, and milestone status for each OU, as well as other program activities, are presented in Section 2. Section 3 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4 contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is almost 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility (designed for this purpose), and released onsite into the South Interceptor Ditch along side Woman Creek. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period

Investigation of plutonium hot spots has been added to the scope of the Final RI Report.

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92

March Work Activity Status

Bentonite was placed in the wetlands to decrease permeability before planting wetland vegetation. The field survey to define the radionuclide hotspots on the OU 1 881 Hillside began December 15, 1992, and concluded January 22, 1993. The follow-up surveys for the plutonium anomalies started in and continued through March. The surveys are scheduled to be completed in April. An action plan for investigation of any hot spots has been submitted to the regulatory agencies. EPA has commented on the action plan and revisions based on their comments are being made.

Negotiations continue among DOE, EPA, CDH, and EG&G to revise the RI Report to reflect the more-than 100 pages of comments received from the EPA and CDH on the Draft Remedial Investigation (RI) Report. Revisions not affected by the RI negotiations are progressing. Meetings were held throughout the month with the regulatory agencies to resolve outstanding issues on the RI report. Issues discussed in March included the contaminants of concern (COC) for the Human Health Risk Assessment (HHRA), statistical use of background

data, the data set to be included in the report, standard operating procedures (SOPs), assessment coverage, ecological approach, and follow-up criteria.

DOE requested an extension on the Final RI Report and the Draft and Final FS Reports. The requested submittal date for the Final RI Report is November 15, 1993. The Report was originally due January 4, 1993, but was extended to April 4, 1993. The requested date for submittal of the Draft FS Report is February 11, 1994, and August 3, 1994, for submittal of the Final FS Report.

Work on the FS is on hold until after completion of the RI.

Planned Work for April

- The change control process will be initiated to incorporate the added scope to the RI.
- Surface water flow meters will be ordered for installation on the 850 Building parking lots.
- Meetings among DOE, EPA, CDH, and EG&G will continue to resolve issues related to the RI Report. Comment response and revision on the RI Report will continue.
- Follow-up surveys for radionuclide hotspots on the 881 Hillside will continue.
- Planting of vegetation in the wetlands is planned for April.

Problems

Field instrument for the detection of low-energy radiation (FIDLER) surveys are progressing slower than anticipated due to scheduling and weather problems.

Open Items

None

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90

Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (Bldg. 891)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

March Work Activity Status

Approximately 30,000 gallons of water was treated in the OU 1 Interim Remedial Action (IRA) Treatment Facility during March 1993. Effluent tank T-206 is full, and is awaiting analytical results prior to discharge. The pH in the tank is presently 8.8, which is within discharge standards. T-205 is being filled and is approximately one-third full.

The total water collected to date is approximately 961,903 gallons; the total discharged treated water is approximately 800,500 gallons.

Revision of the new SOPs for Treatment Building 891 is in progress.

Engineering work started on the 881 Hillside French drain surface water monitoring stations. Evaluation of the remaining work for OU 1 is underway to determine the work priorities. A schedule for completion of the surface water stations is being developed.

The new subcontractor, who was procured under the Master Task Subcontract (MTS) system for operations and maintenance of OU 1 and OU 2 IRA facilities, is currently being trained to operate the two facilities. Combining operations of the two IRAs under one subcontractor will result in a significant cost savings. The present subcontractors operating the treatment facilities at OU 1 and OU 2 will be onsite for transition and training through the end of April 1993.

The regulatory agencies required the establishment of a wetlands area north of the French drain as part of the French drain construction work: the French Drain Mitigation Plan. The wetland area was constructed last fall, but the permeability of the wetland is too high to allow wetland vegetation to be established. The regulatory agencies, DOE, and EG&G; agreed to a solution which was to line the wetland area with bentonite, thus lowering its permeability enough to support the wetland vegetation. EG&G committed to have the bentonite in place by April 1, 1993, after EPA requested the wetland be modified before the spring runoff begins. The work was completed on March 25, 1993. The bentonite was laid in place and raked into the top few inches of the wetland area to avoid resuspension.

Planned Work for April

- Continue water treatment system operations.
- Continue revision to the SOPs.
- Continue the training and transition of the OU 1 and OU 2 operations subcontractor.
- Complete engineering work and installation of the 881 Hillside French drain surface water monitoring stations.

Problems

None

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, some of which may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The RI and FS are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates interim remedial actions for removal of residual free-phase VOC contamination from three distinct subsurface environments at OU 2. Each of the VOC-removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The IRAs for the collection of information will aid in the selection and design of final remedial actions that address subsurface, residual free-phase Volatile Organic Compound (VOC) contamination at OU 2.

2.2.1 OU 2 Assessment

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91

March Work Activity Status

The Bedrock Work Plan was submitted to EPA and CDH on March 15, 1993. A meeting was held on March 31, 1993, among DOE and the regulatory agencies to discuss the deficiencies with the Bedrock Work Plan so that bedrock field work can begin in April 1993. The regulatory agencies have given approval to begin field work according to TM #8, the Revised Phase II RFI/RI Work Plan. Also discussed were the Exposure Scenarios and ground water COCs. OU 2 will follow

the lead of OU 7 in answering the exposure scenario comments, since OU 7 comments were similar to those on OU 2.

Comments were received March 31, 1993, for TM#6, Modeling. Resolution of these comments began. An additional version of TM #6 will be produced.

Field crews were mobilized on March 8, 1993, to collect 52 surficial soil samples for the HHRA. The surficial soil sampling for the HHRA was completed by March 26, 1993, ahead of schedule. Expedited results are now being received.

A letter of subcontract was signed March 31, 1993, to permit a subcontractor to mobilize for the field work portion of the contract to perform the bedrock and surficial soils tasks.

Work is continuing on the RI Report for the characterization and the nature and extent of contamination. The ground water model used for the RI Report is being developed.

Planned Work for April

- Bedrock field work as outlined in TM 8 is planned to begin on April 5, 1993, with field mobilization.

Problems

The March 12, 1993, IAG Milestone for submittal of the Draft Phase II RFI/RI Report was not met due to the delayed Bedrock Program. In a letter received by DOE on March 16, 1993, EPA and CDH denied a 9-month extension request for submittal of the OU 2 Draft RI Report. EPA and CDH notified DOE that stipulated penalties may be assessed at a rate not to exceed $5,000 for the first week and $10,000 every week thereafter that the report is late. Negotiations among all parties continued in order to resolve issues preventing completion of the delinquent report.

Open Items

A submittal date for the delinquent Draft Phase II RFI/RI Report is pending.

2.2.2 OU 2 Remediation

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90

Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I GAC)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93

March Work Activity Status

Surface IRA Program

The Field Treatability Unit (FTU) collected, treated, and discharged approximately 550,000 gallons of surface water during March 1993. Operation has been normal and without problems. Influent flows to the system have remained normal.

The membrane filter was cleaned on March 16, 1993, and the result was acceptable, but not as effective as it should have been. As a result, the membrane filter required a follow-up cleaning on March 20, 1993, using a slightly modified procedure. The modified procedure was very effective at returning the filter to the normal treatment flow rate. The next membrane cleaning is scheduled for April 3, 1993.

Seventy-one drums of sludge were generated since the radionuclide removal system started operations on April 27, 1992. One-hundred drums of sludge were expected to be generated during the first year of operation.

Subsurface IRA Program

The contract for fabrication of the Mobile Vapor Extraction Unit is expected to be awarded the first week in April 1993.

The subcontractor technical evaluation for the Soil Vapor Survey is almost complete and will go into final negotiations once completed in April. A contract is expected soon. Bids on the Statement of Work (SOW) and procurement package for the installation and operation of the Soil Vapor Test Plant have been received.

Planned Work for April

- Continue water collection and treatment in the surface water IRA.
- Bids for the Vapor Extraction Pilot Test are due by April 2, 1993.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as IHSS: Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay v. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

March Work Activity Status

Negotiations are continuing with offsite landowners for access to surface soil sampling locations.

A letter was sent to the CDH Project Manager for the Dose Reconstruction Project reaffirming the cooperative soil sampling agreement reached in the meeting held February 5, 1993. A proposal was made at the meeting to conduct mutual soil sampling between DOE and Colorado State University (CSU), with the samples being split three ways. The first of three joint soil-sampling events was conducted March 31, 1993, with representatives from the three organizations currently conducting studies on offsite contamination: DOE, CSU, and the CDH sponsored Health Advisory Board. The three-way soil samples will be analyzed by DOE, CDH, and a laboratory determined by the Health Advisory Board.

The bald eagles have not been seen for over a week, thus planned spring field activities should proceed uninterrupted following confirmatory letters with the U. S. Fish and Wildlife Service (USFWS).

A meeting was held with DOE and EG&G to discuss coordination with the Cities' Option B Project on their new ecological study requirements needed because of the presence

of the Bald eagle nest. The Cities independently developed a schedule to complete the ecological requirements, and they expect to obtain the necessary data from the OU 3 Project. The OU 3 Project does not have the resources available to meet the proposed schedule request of the Cities. A schedule of when data will be available and when guidance on requirements will be provided to the Option B Project will be generated to allow the Cities to develop a more realistic schedule.

A meeting was held March 10, 1993, with DOE and the regulatory agencies to status the environmental evaluations (EE) work, identify changes made during field work, and discuss development of the EE report with experience gained from OU 1. The meeting went very well, with future meetings planned to maintain this level of communication during development of the EE report.

Planned Work for April

- Continue the three-way soil sampling with DOE, CDH, and a laboratory determined by the Health Advisory Board.
- Continue negotiations with offsite landowners for permission to sample their property.

Problems

The July 16, 1993, IAG Milestone for submittal of the Draft Phase I RFI/RI Report will require an extension due to delays in completing the field work. These delays are because of the inability to get access to some privately owned land for sampling.

Open Items

None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is made up of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C. Beginning in the late 1950s, the ponds were used to store and evaporate low-level radioactive process water containing high concentrations of nitrates and treated acidic wastes. The sludge and sediments that resulted from the process were periodically removed and disposed of at the Nevada Test Site (NTS).

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle ground water contaminated by the ponds and to prevent natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger, interceptor trench system which recycles approximately 4 million gallons of ground water a year back into the solar evaporation ponds.

No additional process water has been pumped into the ponds since 1986. The interceptor trench system collects and recycles ground water into the solar evaporation ponds continuously. Presently, only the 207B north solar evaporation pond receives contaminated ground water collected by the interceptor system. The ponds are Resource Conservation and Recovery Act (RCRA) interim status regulated units that are currently under closure. In order to proceed and characterize the level of contamination at the site, approximately 8 million gallons of excess liquid in the ponds must be removed. The removal of this liquid and the redirection and treatment of the ground water by the interceptor trench system are the focus of an IM/IRA dated April 1992, which began construction in May 1992.

The April 1992 IM/IRA was developed as to facilitate DOE fulfilling commitments under the AIP and IAG. DOE attempted to modify the existing RCRA Part B permit for water removal and treatment for liquids in the solar ponds and ground water collected by the intercepter trench system, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system.

There is an IM/IRA scheduled in the IAG that will be completed after results are collected and analyzed from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994.

2.4.1 OU 4 ASSESSMENT

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	Modified sampling below 207 liner.	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan	08 Jun 90 26 Nov 91
March Work Activity Status	Drilling and sampling continued to be conducted within the RFP Protected Area (PA) and Pond 207A.	

The FIDLER survey was completed within the PA. The radiological survey is now 100 percent complete except for 207B Series and 207C ponds.

Transducers and data loggers were installed in four select wells in or near the Solar Ponds. The transducer continuously records ground water fluctuation for later evaluation. The transducers will support the delineation of the vadose zone.

TM #2, Modification to Field Activities; TM #3, Environmental Evaluation, and TM #4, Baseline Risk Assessment Exposure Scenarios, were transmitted to the regulatory agencies on March 19, 1993, for review and comment. Comments from the regulatory agencies on the TMs are due to DOE on April 17, 1993.

Planned Work for April

- Continue assessment drilling activities.

Problems

- The May 21, 1993, milestone for submittal of the Draft Phase I RFI/RI Report will require an extension due to the delayed field program. DOE and EG&G are collecting the required documentation to support an extension request.

Open Items

None

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

None. The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document scheduled for April 14, 1994.

March Work Activity Status

Regulatory Issues-A meeting was held on March 1, 1993, for DOE, EG&G, and the Solar Ponds Program Office (SPPO) to present the results of the sludge-processing options study to EPA and CDH. The regulators provided their perspective on the options. EPA and CDH comments were used in finalizing a presentation of the options to DOE HQ. The comments were very helpful, and CDH followed up by providing information on state and local regulatory frameworks for the landfill closure option.

The initial approval for the Building 910 air emissions permit included three conditions that require action. Based on discussions with CDH staff, the SPPO prepared a draft letter responding to those requirements. A permit modification will

likely be requested to fulfill one condition with existing data rather than new samples.

CDH and EPA have recently clarified their priorities for Solar Ponds Water Management and have placed emphasis on removing excess water from the ponds as compared to treating interceptor trench system water. EG&G is responding to this prioritization; however, emphasizing pond water removal will complicate management of the trench water. SPRP has commissioned the EP, Surface Water Division to prepare a water balance study and precipitation response estimates for the trench system. Such information will be important to proactive management of trench water to avoid exceeding tank capacity. If circumstances threaten to exceed tank capacity, the plant would require CDH's approval to return trench water to the ponds as an emergency action. CDH representatives have indicated they would allow this as an undesirable last alternative should such an emergency occur.

Responses to DOE's comments were incorporated into the B910 H&SP, and the H&SP was distributed for review and comment. This H&SP supports the OU 4 IM/IRA implementation. Although the revision is slightly behind schedule, we expect the H&SP to be ready in time for the scheduled B910 startup. The Sub Project Baseline was presented to DOE Headquarters as part of the March 9, 1993, review. Details of the Options Analysis were also presented. The recommendation resulting from the Options Analysis was to cease pursuit of the baseline (HNUS) approach for sludge processing and pursue design and an IM/IRA Decision Document for In-place storage of the sludge in the ponds.

The new approach would include the demobilization of the HNUS C pond equipment, but HNUS would continue with the characterization and treatment studies for failed pondcrete/saltcrete (Remix). RFP would also continue developing the commercial disposal (Envirocare) sub option to the baseline. Current field work would remain unchanged. RFP would continue with sludge consolidation in one pond, ITS Diversion, the startup of the Building 910 evaporators, and the RI.

A meeting was held March 24, 1993, to discuss potential problems associated with the storage of liquified petroleum gas (LPG) at the 904 and 750 pads. It was decided that additional housekeeping efforts will be required at the site. EG&G is relocating combustible materials previously stored near the tanks to a location farther away from the tanks. Weed control of the tank areas is being arranged with plant building services.

Diversion of the Interceptor Trench System (ITS) water from the solar ponds to the Temporary Modular Storage Tanks will

occur in April. The schedule for the ITS Diversion is being prepared to show all activities that are on the critical path for completion of the project and for meeting our commitment to CDH/EPA. DOE's conditional approval of the B910 Safety Analysis Review (SAR) is integrated into the Readiness to Operate decision for the ITS.

Hydrotesting of the west modular tank was completed March 6, 1993, with no evidence of leaks. The water with tracer was pumped into the east tank to begin hydrotesting. The 20 m liner has been removed from the center tank and vacuum testing of the 80 m liner is currently underway.

The east modular tank leaked during the hydrotest. This conclusion was indicated and confirmed by increasing levels of tracer in the secondary containment leak detection system. The center tank was inspected, repaired, and prepared for hydrotesting, and the water containing tracer was pumped from the east tank to the center tank. The center tank has passed the hydrotest with no leaks. The east tank was repaired in preparation for the second hydrotest.

Planned Work for April

- Completion of the ITS Diversion.
- Demonstration of emergency tank to tank transfer to DOE.
- Hydrotest Building 910 raw waterline and 215 D Tank.

Problems

None

Open Items

Milestone Schedule IM/IRA Solar Evaporation Ponds OU 4.

	Original Date	Revised Date	Status
Begin Construction of Treatment and Storage System	March 1, 1992	April 6, 1992	Complete
Complete Construction of Treatment and Storage System	June 1, 1992	July 7, 1993	In Progress
Conduct Trial Run of Treatment System	June 8, 1992	June 28, 1993	Pending
Begin Full-Scale Operations	June 15, 1992	September 9, 1993	Pending

2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation in the Woman Creek drainage of 10 IHSSs. These are: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this OU was caused by landfill operations, storm water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, plutonium, uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Medias affected include soils, sediments, surface water, ground water, and air resuspension.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

March Work Activity Status

The High Purity Germanium (HPGe) Survey completed 60 of the 90 setups requiredby March 30, 1993.

Soil Gas Sampling is progressing at the Old Landfill (IHSS 115), and by March 30, 1993, 303 of the 365 locations were sampled. The crew is averaging approximately 11 to 12 locations per day. The estimated completion date is April 7, 1993.

Two drilling rigs are currently operating at the 133 series of the IHSSs. A total of 16 of 28 borings have been completed.

On March 30, 1993, a radioactive "hot spot" was encountered at borehole 55993 in IHSS 133.4. The hot spot was at a depth of 3.3 feet, and the source appeared to be "rusty metal." The core is being stored in the "hot" logging conex until it can be transferred to the appropriate analytical laboratory.

The second synoptic sampling event of Woman Creek drainage was started and completed on March 24, 1993.

The Draft TM #4, Surficial Soil Sampling at IHSS 133 was delivered to the regulatory agencies on March 4, 1993; comments have not yet been received.

The Final TM #6, Cone Penetrometer and Ground Water Testing was delivered to the regulatory agencies on March 23, 1993.

The Final TM #10, Soil Sampling at the Surface Disturbances, is at DOE for review as of March 31, 1993.

Planned Work for April

- Continue borehole drilling at IHSS 133.
- Complete Soil Gas Survey at IHSS 115.
- Begin Cone Penetrometer testing at IHSS 115.
- Begin borehole drilling and soil sampling at IHSS 209.
- Begin soil sampling at IHSS 133.

Problems

Workers encountered higher than expected levels of radioactivity in IHSS 133.2, 133.3, and 133.4, and encountered asbestos contaminated material (ACM) at IHSS 133.4. Drilling was stopped for 3 days to amend the H&SP for the presence of ACM. The work crews went to level C personal protective equipment (PPE) while working in the IHSS 133 series ash pits.

Open Items

Draft TM 4, Soil Sampling, has been at the regulatory agencies since March 4, 1993. Turnaround on other TMs has averaged 7-10 working days.

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSSs. They are the A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B, and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2). Eleven ground water monitoring wells have been installed throughout OU 6 to monitor the alluvial aquifer.

Sediment samples will be collected from the Walnut Creek drainage where existing data are insufficient to adequately characterize the sediments. Sediment sampling has been proposed along each stream segment on North and South Walnut Creeks where additional characterization is needed. Based on a review of the data collected at the existing locations along the OU 6 drainage, there is sufficient information about the sediments in many parts of OU 6. Therefore, the sampling locations specified in the RFI/RI Work Plan have been reduced in those areas.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
Submit Final Phase I RFI/RI Work Plan	16 Sep 91

March Work Activity Status

A meeting was held with the regulatory agencies and DOE on March 25, 1993. The agenda for the meeting was to summarize the completed field operations for OU 6 and outline the HHRA process that is planned. CDH expressed concern over the single exposure area model and may not be in agreement. CDH was fairly emphatic on assessing risk by each IHSS. This process would increase the costs of a risk assessment very significantly. DOE is evaluating the concern.

Documentation for the drums of drill cuttings obtained from the IHSSs in the buffer zone are partially completed. The drums from these IHSSs have been moved to interim storage in the contractor's yard. There are 141 drums of cuttings for OU 6. Approximately 112 of these are from the buffer zone.

Copies of the Environmental Evaluation Sampling and Analysis Plan (EE SAP) were provided to EPA and CDH for review. The EE SAP is not a required deliverable and a response from EPA and CDH on the plan is not required.

Planned Work for April

- Continue assessment of field work, HHRA, and EE.

Problems	None
Open Items	None

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill, and consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91

March Work Activity Status

The Cone Penetrometer Testing (CPT) rig is continuing BAT™ sampling. CPT measures *in situ* lithologic parameters such as density, formation contacts and permeability. Drilling is complete. Monitor well development is complete; ground water sampling is in progress. The CPT rig continues to work 6 days a week.

Subsurface soils sampling is in progress for IHSS 203.

A meeting was held March 29, 1993, with the regulatory agencies, DOE, and EG&G to resolve final comments on TM #1, Exposure Scenarios. A response summary and issue and resolution memorandum will be generated to document this meeting. An additional meeting has been scheduled for April 20, 1993, to finalize the TM.

Comment resolution to the asbestos pit areas is in progress. EPA reiterated the need to sample surficial soils within IHSS 114 because this is a baseline risk assessment of current conditions. Therefore, the current cover needs to be sampled.

TM 2, Modeling Description, is at DOE and will be submitted to the agencies for review. On March 3, 1993, the transmittal letter from DOE to the agencies was prepared.

Planned Work for April

- Completion of field activities.

- Finalization of TM 1.
- EPA and CDH review of TM 2.
- Resolve TM 3, Surficial Soil and Asbestos Disposal Area Characterization Plan, issues.
- Begin TM 4, Contaminants of Concern.

Problems

Extended review times by the regulatory agencies may impact IAG milestone schedules.

Open Items

None

2.8 OU 8 - 700 AREA

The 24 IHSSs which constitute OU 8 encompass separate sites inside and around the production area of the RFP. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 May 92
Submit Final Phase I RFI/RI Work Plan	01 Dec 92

March Work Activity Status

Approval is pending on the Final Phase I RFI/RI Work Plan based on the comment responsiveness summaries delivered to the regulatory agencies on February 26, 1993. The anticipated approval date was March 12, 1993.

A subcontractor has been selected through the MTS process to implement the nonintrusive field work for the Industrial Area (IA) OUs (8,9,10,12,13,14). The technical evaluation is expected to be completed by April 16, 1993. The anticipated contract award date is April 30, 1993.

Planned Work for April

- Complete the technical evaluation for the IA OUs.
- EPA and CDH approval of the RI Work Plan.

Problems

DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs, according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones.

Open Items

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The Original Process Waste Lines (OPWL) consisted of a system of 57 designated pipe sections extending between 73 tanks and 24 buildings connected by 35,000 feet of buried pipeline that transferred process wastes from point of origin to onsite treatment plants. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system have been incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including pickling liquor from foundry operations, medical decontamination fluids, miscellaneous laboratory liquids from Building 123, and laundry effluent from Buildings 730 and 778. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines and by installing borings around the tanks that are outdoors. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

Scope of Work Changes This Period	None
Technical Approach Changes This Period	None
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan — 08 Jun 90 Submit Final Phase I RFI/RI Work Plan — 26 Nov 91
March Work Activity Status	The procurement package for the FY93 nonintrusive field work for the integration of the IA OUs is complete. The MTS procurement process is progressing through its normal cycle, and a contract award is anticipated in April 30, 1993.
Planned Work for April	Procurement activities will continue.
Problems	DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs, according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones.
Open Items	Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is made up of 15 IHSSs scattered throughout the plant that consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be a Field Sampling Plan (FSP), Baseline Risk Assessment Plan (BRAP), and an EE Work Plan. IRA is scheduled to begin in early 1998.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
Submit Final Phase I RFI/RI Work Plan	01 May 92

March Work Activity Status

The timetable of the original planning schedule of February 10, 1993, for waste removal in IHSSs 170, 174, 176, and 210 is running behind schedule. Some waste removal has begun at the Property Utilization and Disposal (PU&D) yard. No materials have been removed from the 964 laydown area (IHSS 176). Additional delays to the waste removal of these IHSSs will ultimately jeopardize the implementation of the OU 10 Phase I field work.

Planned Work for April

- Procurement activities will continue until mid-April 1993.

Problems

DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs, according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones. Additional delays to the waste removal of these IHSSs will ultimately jeopardize the implementation of the OU 10 Phase I field work.

Open Items

- Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.
- Regulatory agencies final approval status of the OU 10 RFI/RI Work Plan is pending.

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the RFP buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

Scope Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	02 Jan 92

March Work Activity Status

The final version of the proposal to rescope OU 11 field activities is at DOE pending approval. The proposed scope change will not impact FY93 funding although it will require funding shifts within the work package. CDH project leads have both verbally supported the outlined proposal outline and have agreed to participate with rescoping. DOE has approved official transmittal of the rescoping proposal outline.

It was decided that our first approach will be to define the action limits, based on risk or applicable, relevant, and appropriate requirements (ARARs) of the COCs for OU 11 that would trigger remediation. This will be calculated prior to field work so that it is possible to assess the risk based upon statistically valid analytical results. This "back end" calculation is unique to RFP but not to the industry in general. It is felt by the technical team that it is highly defendable and would significantly reduce costs.

Minor activities have commenced including establishing task baseline agreements with internal support personnel and a preliminary screening of current OU 11 DQOs.

Planned Work for April

- Continue establishing task baseline agreements with internal support personnel and a preliminary screening of current OU 11 DQOs.

Problems

None

Open Items

None

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 11 IHSSs at the 400/800 Area, including: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - Northeast , South, and West of Building 460 (IHSSs 136.1, 136.2, and 136.3); Process Waste Leak - Owen Area (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan that will include both an EE and an HHRA. After implementation of this Work plan, fieldwork and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 May 92
Submit Final Phase I RFI/RI Work Plan	05 Oct 92

March Work Activity Status

CDH recently informed DOE that the Final OU 12 RFI/RI Work Plan will be removed from conditional approval status, and be considered final approved, pending resolution of the HPGe survey, SOP, and the Benchmark Table. All other issues relevant to the Final OU 12 Work Plan have been resolved.

The procurement package for the FY93 nonintrusive field work for the integration of the IA OUs is complete. The MTS procurement process is progressing through its normal cycle, and a contract award is anticipated in April 1993.

Planned Work for April

- The MTS procurement process is progressing through its normal cycle, and a contract award is anticipated in April 1993.

Problems

DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs, according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones.

Open Items

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs including: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2, and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work Plan that will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

March Work Activity Status

Revision of the OU 13 Final Phase I RFI/RI Work Plan was accomplished ahead of schedule on March 10, 1993. All work was done in-house without subcontractor support. This represents a cost savings of approximately $40,000, based on costs incurred during the development of the Final Work Plan in October 1992.

The procurement package for the FY93 nonintrusive field work for the integration of the IA OUs is complete. The MTS procurement process is progressing through its normal cycle, and a contract award is anticipated in April 1993.

Planned Work for April

In addition to completion of the Compendium of *In Situ* Radiologic Characterization Methods and Analysis, a meeting was scheduled for April 1, 1993, to discuss relocation of materials stored in OU 13.

Several additional SOPs need to be generated by May 5, 1993, and are as follows:

- Vertical Soil Profiles for the HPGe
- Collection of Surficial Soil Samples (per TM #5 for OU 1)
- Collection of Surficial Soil Samples Below Paved Areas

- Soil Coring from 5-Foot Depth to Confirm Soil Gas Surveys
- Use of Colorimeteric Techniques to Determine Concentrations of Inorganic Parameters in Water
- Tank/Pipeline Inspection
- Tank/Pipeline Testing
- Tank/Pipeline Residue Sampling
- Collection of Surficial Soils (Root Zone) for Use in the Ecological Risk Assessment Process
- Collection of Wipe and Pavement Samples for PCBs
- Steam Rinsate Sampling for Characterization in OU 15
- Asphalt Sampling and Analysis
- Laboratory Application of the HPGe

Problems

DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs, according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones.

Open Items

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs, including: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
Submit Final Phase I RFI/RI Work Plan	19 Oct 92

March Work Activity Status

The Final RFI/RI Work Plan for OU 14 was scheduled for approval by the regulatory agencies on November 17, 1992. DOE was notified in writing from the EPA that approval is being withheld until a scope and schedule for performing the IA/Interim Remedial Action Plan (IRAP) is agreed upon by the regulatory agencies and DOE. Approval is being withheld despite the regulatory agencies confirming that the Final Work Plan adequately addressed their comments on the Draft Work Plan.

Seven Potential Areas of Concern (PACs) have been identified that may need inclusion into OU 14. The basis for incorporation of these PACs is the vicinity of their location with respect to existing OU 14 IHSSs. The seven PACs are as follows: 400-802, 700-1102, 600-1101, 700-1103, 700-1100, 800-1210, 500-902. Incorporation of these PACs would necessitate a revision (probably through a TM) to the Work Plan for scope purposes, a change control appeal for budget reasons, and acceptance by DOE and the regulatory agencies.

Another outstanding issue regarding these PACs is their effect on future milestones. OU 14 is already being integrated with

five other OUs (8,9,10,12, and 13), and this fact alone could cause delays in meeting future milestones.

The procurement package for the FY93 nonintrusive field work for the integration of the IA OUs is complete. The MTS procurement process is progressing through its normal cycle, and a contract award is anticipated in April 1993.

Planned Work for April

- The MTS procurement process is progressing through its normal cycle, and a contract award is anticipated in April 1993.

Problems

DOE held a meeting on March 24, 1993, with the regulatory agencies to formally present and discuss the integration of the IA OUs, according to the recent rebaselining and funding allocations for FY93 and FY94. The current funding levels for the IA OUs will not be sufficient to meet any of their respective IAG milestones.

Open Items

Complete the IA OU contracting process and finalize schedules for OUs 8, 9, 10, 12, 13, and 14.

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is composed of seven IHSSs including: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RFI/RI. During scoping meetings for preparation of the Phase I RFI/RI Work Plan for OU 15 conducted between EPA, CDH, and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the ARARs for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The public comment period required for the Closure Plan process will be fulfilled through the Interim Measures/Interim Remedial Actions (IM/IRA) process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes), and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings; and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the RFP RCRA Part B TRU Mixed Waste permit application.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
	Submit Final Phase I RFI/RI Work Plan	26 Oct 92
March Work Activity Status	Comments from the regulatory agencies on the revised Final Phase I RFI/RI Work Plan were received on March 8, 1993. Only two comments were provided by the regulatory agencies along with conditional approval of the Work Plan based upon resolution of the comments. The comments are currently being addressed. The OU 15 Phase I RFI/RI Work Plan will be considered approved when comments from the regulatory agencies to the Work Plan are completed.	

The issue regarding IHSS 212 included within EPAs previous Work Plan comments will be resolved upon revision of the OU 15 Work Plan. EG&G RCRA Regulation Programs has been contacted with regard to the possible modification of the RCRA Part B Permit to include preparation of a CERCLA decision document as part of the RCRA Closure Plan for RCRA Unit 63 (i.e., IHSS 212). Similarly, the RCRA Closure Plan may be able to address contamination outside of the IHSS (i.e., contamination associated with IHSS 212), since the contamination will have to be investigated in accordance with CERCLA. If the RCRA Closure Plan for Unit 63 can be modified to include CERCLA issues regarding IHSS 212, then IHSS 212 could be removed from OU 15 completely.

Coordination of Transition work, building operations, and use of EG&G Radiological Protection Technicians (RPTs) for implementation of the Phase I RFI/RI Work Plan is ongoing. The coordination of Transition work, IAG work (i.e., Environmental Restoration work), and building operations is a major accomplishment.

Implementation of the Phase I RFI/RI Work Plan is proceeding with preparation of a SOP for Steam Rinsate Sampling. The SOP will be delivered in draft form on April 2, 1993. The draft OU 15 Work Plan Implementation Plan was submitted on March 26, 1993. The early start date for performance of OU 15 field work is currently scheduled for May 17, 1993, pending Steam Rinsate Sampling SOP approval, Site Specific H&SP approval, and the adequate completion of the Quality Assurance (QA) Readiness Review.

On March 26, 1993, the Procurement Package was completed for modification of the subcontract to include preparation of a SOP for shipment of radioactive samples offsite, coordination of RPTs for implementation of the OU 15 Work Plan, and coordination of IAG activities with Transition activities during implementation of the OU 15 Work Plan. Meetings were held to discuss the generation of waste during OU 15 work plan performance. During the discussion, it was determined that the steam rinsate will probably be nonhazardous and can be containerized accordingly. However, receipt of chemical analyses results from steam rinsate sampling will be utilized to characterize the drummed rinsate and confirm its nonhazardous nature. All solid wastes can be incorporated into the individual building waste streams according to standard waste generation procedures.

Planned Work for April

- Field work mobilization activities will continue with preparation of SOPs, the H&SP, and coordination of IAG work with RFP operations and transition work.

- The OU 15 Work Package Milestone of April 6, 1993, for Work Plan approval will be met.

Problems

None

Open Items

It is being determined if an Integrated Work Control Package (IWCP) to conduct OU 15 field work is needed.

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a No Further Action Justification (NFAJ) Document for 7 IHSSs, including: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks, Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft NFAJ Document Submit Final NFAJ Document	04 Mar 92 30 July 92
March Work Activity Status	The NFAJ Document for OU 16 is still pending approval despite the expected approval date of November 20, 1992. A draft letter was prepared as documentation of the status of the project and the pending approval of the NFAJ Document. The issue to be resolved between the regulatory agencies and DOE is whether the administrative process to close out this OU is complete at this stage, or whether the process needs to be carried through to a ROD.	
Planned Work for April	•Pursue approval of the NFAJ Document.	
Problems	None	
Open Items	Approval of the NFAJ Document.	

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP ER activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft HSP	15 Aug 90
Submit Draft Quality Assurance Project Plan (QAPP)	29 Aug 90
Submit Draft SOPs	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion (PPCD)	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan (CRP)	01 Nov 90
Submit Final HSP	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final CRP	22 Jan 91
Submit Final QAPP	01 Mar 91
Submit Final SOPs	01 Mar 91
Submit Draft Discharge Limits Radionuclides Plan (DLRP)	05 Apr 91
Submit CRP RS	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final PPCD	22 Jul 91
Submit Final DLRP	16 Sep 91
Submit Final PPCD and RS	25 Nov 91
Submit Draft Historical Release Report (HRR)	08 Jan 92
Submit RS for DLRP	31 Jan 92
Submit Final HRR	03 Jun 92
Submit Annual Treatability Study Report	8 Mar 93

March Work Activity Status

Sitewide Treatability Studies

Annual Report - The Sitewide Treatability Studies Annual Report is an IAG milestone. The annual report includes a summary of the status of each of the sitewide projects, a literature review of new and emerging technologies, and a summary of other relevant environmental projects at RFP.

The final report (FY92) was delivered to the regulatory agencies on schedule, March 8, 1993. The procurement package for the preparation of the FY93 Annual Report is progressing. The SOW has been drafted and is being reviewed internally.

Soil Washing Demonstration (NRT) - Nuclear Remediation Technologies (NRT), a subsidiary of General Atomics located in San Diego, CA., has proposed to test their proprietary soil washing process on a sample of RFP plutonium-contaminated soil. The test work will be carried out with no charge to RFP other than the costs for obtaining and shipping the soil sample and for someone from RFP to witness the test work.

Initial testing using a combination flotation-attrition scrubbing-leaching process to separate and recover plutonium from the soil began in February 1993. The goal of this work is to produce a clean soil fraction that could be used as backfill at RFP and a "contaminated" fraction that would contain the plutonium. Results of the initial test work will be used to design an optimized cleaning process. The optimized testing will be witnessed during the week ending April 2, 1993.

Pu in Soils - Physical Separation (TRU/Clean) - The TRU/Clean process (physical separation) was identified in the Final Sitewide Treatability Plan for further test work and evaluation to determine how effectively it might remove plutonium contamination from the soils at RFP. Initially this test work was planned to be a part of the Plutonium in Soils Integrated Demonstration. However, the ID was put on hold. Therefore, RFP has contracted with Lockheed Environmental Systems and Technologies Company to conduct testing of the TRU/Clean process with soils from RFP.

The Final Draft of the Treatability Study Work Plan and Responsiveness Summary to EPA Comments were delivered to the regulatory agencies on February 10, 1993. At the quarterly review meeting held on February 26, 1993, EPA stated that they had no comments on the Work Plan and RFP should go forward with the treatability study as proposed.

The samples were shipped to Lockheed from RFP on March 23, 1993. Test work using these samples should begin by mid-April 1993.

Peer review of Technology Selection Process - The Rocky Mountain University Consortium has been authorized to begin a review of the Final Treatability Studies Plan with particular emphasis on the Technology Review and Selection processes. The review is based on a SOW prepared by CSU.

DOE met with CSU on January 27, 1993, to discuss the goals of the review process. This meeting produced a tentative

schedule for the review work. The highlights of the schedule are as follows:

• Form a review committee	February 12, 1993
• Review committee's evaluation and recommendations for the Technology Selection Process	March 19, 1993
• Draft of technology screening results	April 19, 1993
◦ EG&G/DOE comments on draft	May 3, 1993
• Final Document from Consortium	June 15, 1993

The review committee has been formed and is now reviewing the Technology Selection process as described in the Final Treatability Studies Plan.

Community Relations - Community Relations conducted tours related to the ER Program, presented a speakers bureau program about the RFO ER Program, responded to letters of inquiry concerning the ER Program, and worked on the ER Newsletter.

Community Relations is putting together a community "critique sheet" to pass out at the ER Quarterly meeting. This will give Community Relations a better idea of what the community would like to hear about regarding the ER program.

Radiological Sample Backlog Reduced - One of the significant contributors to schedule impacts over the last 18 months has been reduced ER Management/Sample Management Office (ERM/SMO) representatives worked with analytical subcontractors to reduce the sample backlog from approximately 400 samples to zero as of March 8, 1993.

ERM/SMO continues to reduce project analytical costs by assigning samples to lower cost laboratories when capacity is identified for specific analyses. Although some costs for services conducted in FY92 continue to be realized in FY93, project savings will be realized by managing the analytical flow for cost efficiencies. A quantitative analysis will be conducted to determine the actual projected cost savings in the first half of FY93.

A presentation to the EPA Region 8 representatives concerning improvements made to the Rocky Flats Environmental Database System (RFEDS) and the management of analytical services was conducted on March 1, 1993. The presentation was well received.

Six annual surveillance audits were conducted on laboratories contracted to perform analytical services for ERM during the February and March time frames.

A data deliverable requested from DOE/HQ in support of the National Sample Tracking System (NSTS) pilot study was met.

Planned Work for April

Sitewide Treatability Studies
Representatives from the Fernald Uranium in Soils, Integrated Demonstration will be visiting on April 5, 1993, to discuss how they might be able to support the Plutonium Solubilization for Remediation Applications project.

The optimized testing for the Soil Washing Demonstration will be witnessed during the week ending April 2, 1993.

Test work for the TRU/Clean process (physical separation) is scheduled to begin by mid-April 1993.

Community Relations
The ER Update Newsletter will be mailed out the week of April 5, 1993.

Community Relations is preparing a community advisory, and assisting media relations in preparing a media advisory for the ITS Diversion transfer project taking place on April 7, 1993.

Upcoming Community Relations Meetings:

April 7, 1993 - Site-Specific Plan Public Information Meeting held at 7:00 p.m. to 9:00 p.m., at the Ramada Hotel, 8773 Yates Dr., Westminster, CO.

April 13, 1993 - Quarterly ER Public Information Meeting will be held from 7:00 p.m. to 9:00 p.m., at the Ramada Hotel, 8773 Yates Dr., Westminster, CO.

April 27, 1993 - Environmental Surveillance Exchange of Information Meeting at 1:30 p.m., at Broomfield City Council Chamber, #6 Garden Office Center, Broomfield, CO.

April 28, 1993 - Site-Specific Plan Public Comment Meeting at 7:00 p.m. to 9:00 p.m., at the Ramada Hotel, 8773 Yates Dr., Westminster, CO.

Problems

None

Open Items

None

SECTION 3. ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for routine environmental monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the EM Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOAs	Metals CLP TAL and Non-TAL
Field Parameters	Specific Conductivity
Dissolved Oxygen	Major Anions
Radionuclides	Temperature
TDS/TSS	pH
Nutrients	

- Additionally, sediment samples are analyzed for CLP-Semi VOAs, CLP-Pesticides/PCBs and Herbicides-69.

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) is sampled annually.
- Each soil sample is analyzed for Pu and Am.

3.3 GROUND WATER

A total of 410 ground water stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one-third of the wells are monitored monthly for water levels.

Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, and metals, as well as the following parameters:

Radiochemical Parameters	Inorganic Parameters	Field Parameters
Gross Alpha	Nitrate/Nitrite	DO
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature
Americium	Ammonia	Turbidity
Strontium	TDS	pH
Tritium	Fluorine	
Uranium	Sulfate	
Cesium	Carbonate	
	Bicarbonate	

Radiochemical Parameters	Inorganic Parameters	Field Parameters
	TSS	
	Total CLP Metals & additional metals	
	Dissolved CLP & additional metals	
	Cyanide	
	CLP Volatile Organic Compounds	

SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
1	Assessment	Ebasco	Dames & Moore Stoller Corp.	OU 1 RFI/RI field work (drilling, well development/ completion, sampling) and RI report and CMS/FS report	Apr 91
1	Assessment	Roy F. Weston		Revise RI Report, Respond to agency comments	Feb 93
1	Remediation	Bruner		OU 1 IRA ion exchange system	Feb 91
1	Remediation	E.T. LaFore		Installation of Phase II-A treatment system equipment for OU 1 IRA	Jun 91
1	Remediation	IT Corporation	CH2MHill/OMT	B-891 Treatment System Operations	
1	Remediation	Jennison		Construct Phase II-B French drain at OU 1 IRA	Aug 91
1	Remediation	P.S.I.		OU 1 IRA UV/Peroxide System	Aug 91
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller Corp.	Environmental Evaluation	Feb 91
2	Remediation	Reider (RFG in April)		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Dec 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Assessment	Applied Environment	Gerashby & Miller Nright Water, Stoller Doty & Associates	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
5	Assessment	ASI	Dames & Moore Blackhawk Geoscience Walsh & Assoc. Fugro Geosciences Lagne Envir. Service Utility Mgmt. Service	Implementation of OU 5 Work Plan (excluding EE)	Jun 92

Sub-

OU	Project	Subcontractor	Subcontractor S.M. Stoller Adv. Terra Testing	Work Description	Start Date
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward Clyde	Lane, Ogden Geo Environmental	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Feb 90
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFI/RI Work Plan including EE Plan and QA Addendum	Apr 90
15	Assessment	S.M. Stoller		OU 15 RFI/RI Work Plan	May 92
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	ASI		Geologic Characterization, Data Base, and graphics	Feb 90
SW	Geo. Char.	S.M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters level training program in ES and Engineering	Aug 92 Dec 94
SW	Geo. Char.	Woodward Clyde		Support for the SSWMS	Feb 93
SW	Gio. Char.	CSU		Sequential Extraction	April 92
SW	Geo. Char.	CU		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S.M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90
SW	PPCD	Ebasco		PPCD	Jun 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S.M. Stoller		Program Management Support	Feb 90
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirements
BRAP	Baseline Risk Assessment Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
DOE	Department of Energy
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
EPA	Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FSP	Field Study Plan
FTU	Field Treatability Unit
FYP	Five Year Plan
GAC	Granular Activated Carbon
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HRR	Historical Release Report
H&S	Health and Safety
H&SP	Health and Safety Plan
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
LL	Low-level
MTS	Master Task Subcontract
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NTS	Nevada Test Site
OPWL	Original Process Waste Line
OU	Operable Unit
PA	Protected Area
PAC	Potential Area of Concern
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment
PU&D	Property and Utilization Disposal
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation

RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
SAR	Safety Analysis Review
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
TDS	Total Dissolved Solids
TM	Technical Memorandum
TSS	Total Suspended Solids
USFWS	United States Fish and Wildlife Service
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WS	Waste Solidification